

CLAIMS

1. A data reproduction apparatus for reproducing data recorded in a recording medium, and capable of being connected
5 via an interface bus to a video display apparatus that operates according to software, comprising:

a transmitter that transmits video data and audio data read from the recording medium, using a first area and a second area, respectively, to said video display apparatus via said
10 interface bus; and

a controller that controls said transmitter to transmit, at the time of a software update for said video display apparatus, update software read from the recording medium to said video display apparatus via said interface bus,
15 using a third area for transmission of additional data that is different from said first and second areas, while indicating the software update to said video display apparatus.

20 2. The data reproduction apparatus according to claim 1, wherein

information related to the software update is further recorded in the recording medium, and
25 said controller controls, at the time of the software update for said video display apparatus, said transmitter to

transmit the related information read from the recording medium to said video display apparatus via said interface bus, using said first area and/or said second area.

5 3. The data reproduction apparatus according to claim 2, wherein

 said related information includes audio data, and
 said controller controls said transmitter, at the time
 of the software update for said video display apparatus, to
10 transmit the audio data in said related information read from
 the recording medium to said video display apparatus via said
 interface bus, using said second area,.

15 4. The data reproduction apparatus according to claim 2, wherein

 said related information includes video data, and
 said controller controls said transmitter, at the time
 of the software update for said video display apparatus, to
 transmit the video data in said related information read from
20 the recording medium to said video display apparatus via said
 interface bus, using said first area.

5. The data reproduction apparatus according to claim 2, wherein

said related information includes operational guide information representing an operational procedure for the software update.

5 6. The data reproduction apparatus according to claim 1, wherein

10 said interface bus includes a data line that transmits the video data, the audio data, and the additional data, a clock line that transmits a clock signal, and a control line that transmits a control signal, wherein

15 said first area is a video period of the video data, and said second and third areas are present in a blanking interval of the video data, and

20 said transmitter outputs a clock signal to said clock line while transmitting, in synchronization with the clock signal, the update software via the data line using said third area.

7. The data reproduction apparatus according to claim 1, wherein

20 said update software includes identification information for identifying an object whose software should be updated, and

said controller indicates a software update to said video display apparatus based on said identification information.

5 8. The data reproduction apparatus according to claim 7, further comprising a storage device that stores software for said controller, wherein

 said controller indicates a software update to said video display apparatus when said identification information 10 represents said video display apparatus, and updates the software stored in said storage device, using the update software read from the recording medium, when said identification information represents a software update for said controller.

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 9. A video display apparatus capable of being connected to a data reproduction apparatus via an interface bus, comprising:

 a receiver that receives video data and audio data 20 transmitted by said data reproduction apparatus via said interface bus, using a first area and a second area, respectively;

 an audio output unit that outputs a sound based on the audio data received by said receiver;

a video display unit that displays an image based on the video data received by said receiver;

 a processor that controls said video display unit and said audio output unit; and

5 a storage that stores software for said processor, wherein

 said processor updates, upon reception of update software by said receiver that is transmitted via said interface bus using a third area for transmission of 10 additional data that is different from said first and second areas, and indication of a software update by said data reproduction apparatus, the software stored in said storage using the update software received by said receiver.

15 10. The video display apparatus according to claim 9, wherein

 said processor controls said receiver to receive information related to the software update that is transmitted via said interface bus using said first area 20 and/or said second area, and causes said video display unit to display an image and said audio output unit to output a sound, based on the related information received by said receiver.

11. The video display apparatus according to claim 9,
further comprising:

an expansion function unit that implements an expansion
function;

5 another processor that controls said expansion function
unit; and

another storage that stores software for said processor
for said expansion function, wherein

10 said processor transmits, upon indication of a software
update for said other processor by said data reproduction
apparatus, the update software received by said receiver to
said other processor while indicating the software update for
said other processor, and

15 said other processor updates the software stored in said
other storage according to the indication by said processor,
using the update software transmitted from said processor.

12. A software updating system comprising:

20 a video display apparatus that operates according to
software; and

a data reproduction apparatus for reproducing data
recorded in a recording medium, and capable of being connected
to said video display apparatus via an interface bus, wherein
said data reproduction apparatus includes:

a transmitter that transmits video data and audio data read from the recording medium, using a first area and a second area, respectively, to said video display apparatus via said interface bus; and

5 a controller that controls said transmitter to transmit, at the time of a software update for said video display apparatus, update software read from the recording medium to said video display apparatus via said interface bus, using a third area for transmission of additional data that
10 is different from said first and second areas, while indicating the software update to said video display apparatus, and wherein

 said video display apparatus comprises:

15 a receiver that receives the video data and the audio data transmitted by said data reproduction apparatus via said interface bus using said first area and said second area, respectively;

an audio output unit that outputs a sound based on the audio data received by said receiver;

20 a video display unit that displays an image based on the video data received by said receiver;

 a processor that controls said video display unit and said audio output unit; and

 a storage that stores software for said processor,
25 wherein

5 said processor updates, upon reception of the update software by said receiver that is transmitted via said interface bus using the third area for transmission of the additional data, and indication of the software update by said data reproduction apparatus, the software stored in said storage using the update software received by said receiver.

13. The software updating system according to claim 12, wherein

10 said video display apparatus includes a television receiver.

14. A software updating method for updating software for a video display apparatus using a data reproduction apparatus for reproducing data recorded in a recording medium, and capable of being connected to said video display apparatus via an interface bus, comprising the steps of:

20 transmitting, at the time of a software update for said video display apparatus, update software read by said data reproduction apparatus from the recording medium to said video display apparatus via said interface bus, using a third area for transmission of additional data other than a first area for transmission of video data and a second area for transmission of audio data;

indicating the software update to said video display apparatus by said data reproduction apparatus;
receiving by said video display apparatus, upon indication of the software update by said data reproduction apparatus to said video display apparatus, the update software transmitted via said interface bus using said third area; and
updating the software for said video display apparatus using said received update software.